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Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/KJ/W.No.14/GSB-I/GR/2017-18 Date 12.04.2017

TEST REPORT ON GRADATION FOR COARSE GRADED GARNULAR SUB BASE

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. K. Jagadish,** #3424, 6th Cross, Gayathrinagar, Bangalore – 560 021.
* Name of work	:	Improvements and Asphalting 1st, 2nd, 3rd & 4th Cross (Between 7th Main and 8th) Bhuvaneshwari Nagara in Bagalagunte Ward No.14, Dasarahalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/03/2017-18 Dated: 10.04.2017
* Sample ID	:	Coarse Graded-I
Technical Reference	:	IS : 2720 (Part - 4) 1985 (RA-2010), MORTH Table : 400-2
Date of Testing	:	12.04.2017

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Oven Dry Wt (gm) : 5000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75	0	0	0	100	100
26.5	1450	1450	29.00	71.00	55-75
4.75	2415	3865	77.30	22.70	10-30
0.075	980	4845	96.90	3.10	<10
PAN	155				
Total	5000				

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* Information is furnished by the Customer/Representative

Remarks: Satisfies MORTH Specifications as per Table 400-2, Grading I

Note:

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⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory

⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

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#23/14, 7th Cross, 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

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Job No.: CTCE/BBMP/KJ/W.No.14/BC/Shape.T/2017-18 12.05.2017

TEST REPORT ON FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. K. Jagadish,** #3424, 6th Cross, Gayathrinagar, Bangalore – 560 021.
* Name of Work	:	Improvements and Asphalting 1st, 2nd, 3rd & 4th Cross (Between 7th Main and 8th) Bhuvaneshwari Nagara in Bagalagunte Ward No.14, Dasarahalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/03/2017-18 Dated: 10.04.2017
* Sample ID	:	Hot Mix Plant, Bangalore
Technical Reference	:	IS : 2386(Part -1)-1963 (RA-2011)
* Type of Mix	:	Bituminous Macadam
Date of Testing	:	12.05.2017

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Sl.No.	Description	Result
1	Flakiness Index	11.92%
2	Elongation Index	13.56%
3	Combined Flakiness & Elongation Index	25.48%

*Information is furnished by the Customer/Representative.

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Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Macadam is 30%

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Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

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T-2377

Job No.: CTCE/BBMP/KJ/W.No.14/CSR-05/332/QB(BC)/2017-18 13.05.2017

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. K. Jagadish,** #3424, 6th Cross, Gayathrinagar, Bangalore – 560 021.
* Name of work	:	Improvements and Asphalting 1st, 2nd, 3rd & 4th Cross (Between 7th Main and 8th) Bhuvaneshwari Nagara in Bagalagunte Ward No.14, Dasarahalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/03/2017-18 Dated: 10.04.2017
* Sample ID	:	Bitumen
Source/ Location	:	Hot Mix Plant, Bangalore.
Sample Received on	:	11.05.2017
Period of Testing	:	13.05.2017

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The results of the tests conducted on the bitumen sample are as follows:

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2014)	88	80 to 100
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2014)	46	Min. 40
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2014)	100>	Min. 75
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2014)	304	Min. 220

* Information is furnished by the Customer/Representative

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VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KJ/W.No.14/BC/Sp_Wa/2017-18 16.05.2017

TEST REEPORT ON SPECIFIC GRAVITY AND WATER ABSORPTION

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. K. Jagadish,** #3424, 6th Cross, Gayathrinagar, Bangalore – 560 021.
* Name of Work	:	Improvements and Asphalting 1st, 2nd, 3rd & 4th Cross (Between 7th Main and 8th) Bhuvaneshwari Nagara in Bagalagunte Ward No.14, Dasarahalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/03/2017-18 Dated: 10.04.2017
* Sample ID	:	Hot mix plant, Bangalore
Technical Reference	:	IS : 2386(Part -3)-1963 (RA-2011)
* Type of Mix	:	Bituminous Concrete
Date of Testing	:	16.05.2017

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Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2008	2007	2006	
2	Weight of basket suspended in water	W_2 g	755	755	755	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1239	1238	1251	
4	Weight of saturated surface dry aggregate in air	W_3 g	2005	2006	2002	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	766	768	751	
6	Weight of oven dried aggregate	W_4 g	1995	1998	1996	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.604	2.602	2.658	2.621
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.639	2.629	2.679	2.649
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.50%	0.40%	0.30%	0.40%

*Information is furnished by the Customer/Representative.

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

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Job No.: CTCE/BBMP/KJ/W.No.14/BC/Stability/2017-18 16.05.2017

TEST REPORT ON MARSHALL STABILITY OF MIX

*** Customer**	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. K. Jagadish,** #3424, 6th Cross, Gayathrinagar, Bangalore – 560 021.
***Name of the Work**	:	Improvements and Asphalting 1st, 2nd, 3rd & 4th Cross (Between 7th Main and 8th) Bhuvaneshwari Nagara in Bagalagunte Ward No.14, Dasarahalli Sub Division, BBMP, Bangalore.
***Reference**	:	BBMP/DZ/AEE/TDSD/PR/03/2017-18 Dated: 10.04.2017
*** Source**	:	Hot mix Plant, Bangalore
*** Type of Mix**	:	Bituminous Concrete
Date of Testing	:	16.05.2017

The results of the tests conducted on the Bituminous Concrete mix sample are as follows:

Sl. No	Description	Test Result 1	Test Result 2	Requirement as per MORTH (Table 500-19)
1	Marshall Stability, Kn	9.05	9.35	9 Kn (min)
2	Marshall flow, mm	2.25	2.90	2 – 4
3	Percent air voids in Mineral Aggregate	3.20	3.50	3 – 6
4	Voids in Compacted Mix	13.65	14.25	13 - 15
5	Percent Voids filled with Bitumen	66.65	66.80	65 - 75
6	Density, g/cc	2.26	2.27	--

*Information is furnished by the Customer/Representative.

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#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.